

REMARKS

Within the present application, claims 1-10, 12, 16, and 18-32 are currently pending. Claims 12, 16 and 18-32 have been cancelled without prejudice. Claim 1 has been amended to read that the lead free projectile now consists essentially of a compacted admixture of iron powder and at least one powder selected from tin, zinc and alloys and admixtures thereof and wherein the compacted mixture has a density less than 70% of the theoretical density of lead. Applicant has chosen the transitional phrase of “consisting essentially of” to limit the compacted admixture to that of only iron powder and powdered alloys of zinc and/or tin. Furthermore, Applicant has amended claim 1 to clarify that it is the compacted admixture which has a density less than 70% of the theoretical density of lead and not just the iron powder.

Applicant respectfully contends that the present amendment places the application in a condition for allowance and that the amendments overcome the objections under 35 U.S.C. § 103(a) and 35 U.S.C. § 112. The objections under U.S.C. § 112 are overcome in that the objected to claims have been canceled and applicant respectfully contends that the newly amended claims are no longer obvious under 35 U.S.C. § 103(a).

Specifically, Applicant notes that the newly amended claims now recite that the compacted mixture “consists essentially of” iron powder and at least one powder selected from tin, zinc and alloys and admixtures thereof. The cited art provides a laundry list of different metals and alloys which may be included within the disclosed projectile. The prior art fails to teach or suggest the specific and exclusive selection of the claimed components of tin and zinc in a lead-free projectile as cited in the present application. Tin and zinc are selected and exclusively claimed in the present application since both have similar densities. The similar densities of these metals reduce the probability of segregation in the final mix. A mixture, as

described in the *Benini* reference, would have a greater degree of segregation. Thus, the prior art does not teach or suggest the advantages of exclusively selecting a tin or zinc alloy combined in a compacted admixture.

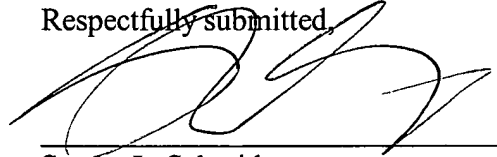
Additionally, the cited art is silent as to the claimed density of the compacted admixture. In the newly amended claims, the compacted mixture has a density of less than 70% of the theoretical density of lead. The cited art fails to recognize the significance of a density less than 70% of lead. Furthermore, the prior art fails to teach or suggest the specific selection of metals which would result in such a claimed density. The PTO has stated that a selection from the small group of metals listed in the *Benini* reference would enable one of ordinary skill in the art to select such metals which would have a density as claimed in the present application. Applicant respectfully notes that the *Benini* reference lists over 16 different types of metals and recites all but one of the basic metals of the periodic table from which lead is a member. Furthermore, Applicant notes that among the first group of metal powders cited in the *Benini* reference, only iron and chromium have a density less than 70% of the theoretical density of lead. Thus, Applicant respectfully contends that the metals listed in the *Benini* reference would not inherently have the claimed density of the present application. Furthermore, one of ordinary skill in the art would not have exclusively selected tin and zinc for the metals listed in the *Benini* reference as claimed in the present application, since such motivation is lacking in the combined cited art.

Upon entry of the above Amendment, claims 1-10 remain pending in the present application. Applicants urge that the present application is now in a condition for allowance and an early notice to such effect is earnestly solicited. However, if it is believed that any issues remain unresolved in the present application, Applicants request that Examiner contact the undersigned.

1/17/04

Date

Respectfully submitted,



Steven L. Schmid

Registration No. 39,358

Womble Carlyle Sandridge & Rice, PLLC
P.O. Box 7037
Atlanta, GA 30357-0037
(404) 962-7539 (Telephone)
(404) 870-8234 (Facsimile)